layer, and [in that] a brushless excitation system [is adapted to excite] for exciting the electric machine.

Claim 2. (Twice Amended) [A] The power plant according to claim 1, [characterized in that] wherein the conductor has a potential [of] and the first layer [is essentially] has a potential equal to the potential of the conductor.

Claim 3. (Twice Amended) [A] The power plant according to claim 1 [or 2, characterized in that] , wherein the second layer [is adapted to form] forms [essentially] an equipotential surface surrounding the conductor.

Claim 4. (Twice Amended) [A] The power plant according to claim 3, [characterized in that] wherein the second layer is connected to a predetermined potential.

Claim 5. (Twice Amended) [A] The power plant according to claim 4, [characterized in that] wherein said predetermined potential is ground potential.

Claim 6. (Twice Amended) [A] The power plant according to [any of the preceding claims; characterized in that] claim 1, wherein at least two adjacent layers of the winding of the machine have [essentially] substantially equal coefficients of thermal expansion.

Claim 7. (Twice Amended) [A] The power plant according to [any of the preceding claims, characterized in that] claim 1, wherein the conductor comprises a number of [strands] conductive elements, at least some of which being in electrical contact with one another.

Claim 8. (Twice Amended) [A] The power plant according to [any of the preceding claims, characterized in that] claim 1, wherein each one of said

[three] layers is fixed to adjacent layers along essentially [the] a whole contact surface therebetween.

Claim 9. (Twice Amended) [A] The power plant according to [any of the preceding claims, characterized in that] claim 1, wherein said layers [are adapted to] adhere to one another even when the insulated conductor is bent.

Claim 10. (Twice Amended) An electric power plant, comprising at least one rotating electric machine of alternating-current type, [intended to be connected] for connection directly to a distribution or transmission network and comprising at least one magnetic core and at least one electric winding, [characterized in that] wherein the winding is formed from a cable comprising one or more current-carrying conductors, each conductor having a number of [strands] conductive elements, an inner semiconducting layer arranged around each conductor, an insulating layer of solid insulating material arranged around said inner semiconducting layer, and an outer semiconducting layer arranged around the insulating layer, and [in that] a brushless excitation system [is adapted to excite] for exciting the electric machine.

Claim 11. (Twice Amended) [A] The power plant according to claim 10, [characterized in that] wherein said cable comprises a sheath.

Claim 12. (Twice Amended) [A] The power plant according to [any of the preceding claims, characterized in that] claim 1, wherein the machine has a field winding for connection to a supply voltage and wherein the brushless excitation system comprises a rotating part with an exciter, [connected to] controllable semiconductor elements connected thereto; and [with] associated control equipment for rectifying the supply voltage obtained for supplying the field winding of the machine.

Claim 13. (Twice Amended) [A] The power plant according to claim 12, [characterized in that] including stationary regulator equipment and wherein a communication unit is adapted for wireless communication between the stationary regulator equipment and the control equipment included in the rotating part.

Claim 14. (Twice Amended) [A] The power plant according to claim 12 [or 13, characterized in that] , wherein the exciter [is of] comprises a synchronous machine [type with] including a rotating stator winding.

Claim 15. (Twice Amended) [A] The power plant according to claim 12, wherein the machine has a magnetic core for carrying flux, and wherein [or 13, characterized in that] the exciter comprises a permanent-magnet generator[, in which] including stationary permanent magnets [are] supplemented by turns of the winding turns for [controlled] controlling changes [of] in the flux.

Claim 16. (Twice Amended) [A] The power plant according to claim 12 [or 13, characterized in that] , wherein the exciter comprises an asynchronous machine [with] including three rotating windings and reversed direction of rotation.

Claim 17. (Twice Amended) [A] The power plant according to [any of claims 12 – 16] claim 12, comprising a machine for auxiliary power generation, [characterized in that] wherein the exciter [is designed with] includes double stator windings for supplying at least one of the electric machine, [or] the main machine [as well as] , and the auxiliary power machine.

Claim 18. (Twice Amended) [A] The power plant according to claim 17, [characterized in that] wherein the double stator windings are each connected to [each of their] respective associated controllable semiconductor elements with respective control equipment for individual control of the supply of the auxiliary power machine and the electric machine.

Claim 19. (Twice Amended) [A] The power plant according to claim 17 [or 18, characterized in that] , wherein the control equipments [are adapted to] generate control pulses to the controllable semiconductor elements for [in a manner] self-compensating for variations in the supply voltage to the semiconductor elements.

Claim 20. (Twice Amended) [A] The power plant according to [any of claims 12-19, characterized in that] claim 12, wherein the controllable semiconductor elements [are adapted to] form a thyristor bridge.

Claim 21. (Twice Amended) [A] The power plant according to [any of claims 12-20, characterized in that] claim 12, wherein a filter transformer is [adapted] operative to determine [the] a phase position for firing the controllable semiconductor elements[for adaptation of the voltage].

Claim 22. (Twice Amended) [A] The power plant according to [any of claims 13-21, characterized in that] claim 13, wherein the communication unit comprises stationary transmitters and/or receivers connected to the regulator equipment as well as receivers and/or transmitters on the rotating part connected to the control equipment for communication therebetween with frequency-modulated infrared light.

Claim 23. (Twice Amended) [A] The power plant according to [any of claims 17-22, characterized in that] claim 17, wherein the auxiliary power

machine is adapted, via the converter, to supply the stationary field winding of the rotating exciter.

Claim 24. (Twice Amended) [A] The power plant according to [any of claims 17-23, characterized in that the] claim 17, including a regulator and an auxiliary power machine for producing an [the] output voltage, which output voltage of the auxiliary power machine is fed back, via [a] the regulator, to the controllable semiconductor elements for the auxiliary power machine for regulating the voltage by excitation control.

Claim 25. (Twice Amended) [A] The power plant according to [any of claims 13-24, characterized in that] claim 13, wherein [the stationary part and the rotating part of the communication unit are adapted for] wireless communication includes at least one of, [capacitively or inductively or by] capacitive, inductive, radio communication [or] , and optical connection.

Claim 26. (Twice Amended) [A] The power plant according to [any of the preceding claims, characterized in that] claim 12, including a unit [is adapted] operative to detect ground faults in the supply of the field winding of the electric machine.

Claim 27. (Twice Amended) [A] The power plant according to [any of the preceding claims, characterized in that] claim 1, including transducers [are adapted] operative to measure the temperature in the field winding of the electric machine.

Claim 28. (Twice Amended) [A] The power plant according to [any of claims 12-27, characterized in that] claim 12, including an overvoltage protection device, controlled by the control equipment [is] connected across the field winding of the electric machine.

Claim 29. (Twice Amended) [A] The power plant according to claim 28, [characterized in that] including current measuring means are arranged on [the] AC and DC sides of the controllable semiconductor elements to measure currents, and [that] the overvoltage protection device is [adapted] operative to be reset in response to the difference between [these] the currents fulfilling a predetermined condition.

Claim 30. (Twice Amended) [A] The power plant according to [any of claims 13-29, characterized in that] claim 13, wherein the electric machine produces an output voltage [of the electric machine] which is fed back to the regulator equipment for adaptation of the supply voltage to [the] actual operating conditions.

Claim 31. (Twice Amended) [A] The power plant according to [any of claims 17-30, characterized in that] claim 17, wherein the auxiliary power machine comprises at least one electric winding with at least one electric conductor, a first layer with semiconducting properties surrounding the conductor, an insulating layer surrounding the first layer, and a second layer surrounding the insulating layer.

Claim 32. (Twice Amended) Use of a rotating electric machine in an electric power plant according to [any of the preceding claims] claim 1[, said machine being intended to be connected directly to a distribution or transmission network and comprising at least one electric winding, said winding comprising at least one electric conductor, a first layer with semiconducting properties surrounding the conductor, an insulating layer surrounding the first layer, and a second layer with semiconducting properties surrounding the insulating layer, and a brushless excitation system for exciting the electric machine].